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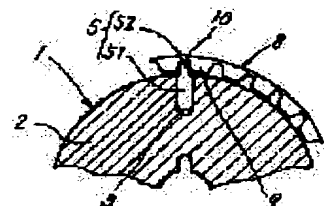
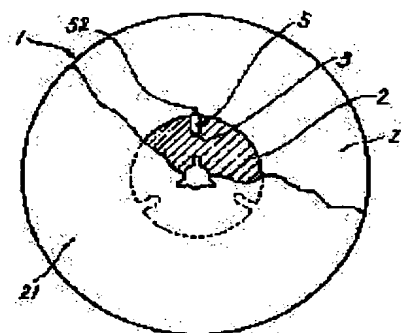
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(54) REEL FOR WINDING CARRIER TAPE

(57)Abstract:

PURPOSE: To wind a carrier tape without any empty pocket by forming claw parts which are fitted in a clearance between the pockets of the carrier tape provided with the pockets for storing a number of electric parts, thus locking the carrier tape on the winding core for winding up reel.

CONSTITUTION: A winding reel 1 is constituted of large diameter flanges 21 on both the sides of a winding core 2, and slit grooves 3 are provided in the plural parts of the winding core 2 of the winding reel 1 at even intervals. A locking piece 5 which is formed by providing a claw part 52 protruding from the peripheral surface of the winding core 2 at the top end of a fitted part 51 which is fitted in the arbitrary slit groove 3. The claw part 52 is formed in a tapered shape so as to be tightly fitted in a clearance 10 between the pockets 9, 9 of the carrier tape 8. Then the claw part 52 is inserted in the clearance 10 between the pockets 9, 9 of the carrier tape 8, and the carrier tape 8 is locked at the winding core 2, thus it is possible to wind the carrier tape 8.



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CLAIMS

[Claim(s)]

[Claim 1] The reel for carrier tape rolling up which forms the claw part (52) which is the reel which rolls round the carrier tape (8) which contained small electronic parts in the pocket (9) formed in the ** pitch, has a flange (21) and (21) to the ends of a winding core (2), gets into the crevice (10) between the pockets of a carrier tape (8), and stops a carrier tape (8) on a winding core (2).

[Claim 2] The reel for carrier tape winding according to claim 1 by which a slit slot (3) is established on a winding core (2), the piece of a stop (5) is inserted in this slit slot (3), and the nose of cam of this piece of a stop (5) serves as a claw part (52).

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] this invention carries out insertion closure of the electronic parts, such as a chip for a tipped type capacitor chip inductor, tipped type volume, and IC, at equal intervals, changes, and relates to the reel which rolls round and packs up the carrier tape for supplying electronic parts to the automatic-assembly line of an electronic product.

[0002]

[Description of the Prior Art] As shown in drawing 10 and drawing 11, the various electronic parts supplied to the assembly line of an electronic product are held according to a kind by the carrier tape (8), and a take-up reel (1) is looped around them, and they are packed up.

[0003] A carrier tape (8) is constituted from a covering tape (82) which closes a pocket (9) by the pocket (9) after receipt in electronic parts (11) with the tape subject made of synthetic resin (81) which was dented in the dense pitch and formed the pocket (9). As for each pocket, the bottom side is narrow gradually.

[0004] A machine reel (1) has the flange (21) of a major diameter, and (21) to both sides of a winding core (2), and the slit slot for a carrier tape stop (3) is established in the winding core (2) at equal intervals at two or more places.

[0005] The point of a carrier tape (8) was bent, it inserted in the slit slot on desired (3), the carrier tape nose of cam was stopped to the winding core (2), and the reel (1) is looped around this carrier tape.

[0006] A carrier tape looping-around reel (1) is set to an automatic-assembly line, a tape is pulled out, and the electronic parts (11) of a ***** pocket (9) are supplied. When the cash-drawer termination of a carrier tape separates with nature from a slit slot (3), a detector detects this termination and it exchanges for the following reel.

[0007]

[Problem(s) to be Solved by the Invention] Deformation and crushing of a pocket (9) arise, and the terminal of the contained electronic parts (11) is bent, or there is a fault which stops being able to take out electronic parts from a pocket easily near the folding section at the nose of cam of a carrier tape (8) at the time of assembly. For this reason, it needed to be made into the empty pocket which has not held electronic parts near the nose-of-cam folding section of a carrier tape (8).

[0008] Since the crushing cost for insertion into a slit slot (3) becomes large, especially the carrier tape with the large depth of a pocket must increase the number of empty pockets, and the nose-of-cam side of a carrier tape cannot be effectively used for it. Moreover, since the intensity of the folding section becomes weak, there is a problem from which it becomes easy to escape.

[0009] Although JP,62-186866,U and JP,64-3760,U have the indication of a purport which prevents deformation of the pocket by the carrier tape stop section at the time of the lap winding of a carrier tape by preparing the level difference doubled with the pocket depth of a carrier tape before and behind the slit slot established in the winding core, in order to stop the point of a carrier tape to a winding core also by this case, it is necessary to crush the edge of a carrier tape, and an empty pocket must be prepared.

[0010] Using an adhesive tape is also performed as a means to stop a carrier tape (8) to a winding core (2). In this case, since the contamination nose of cam of a carrier tape does not separate with nature from a reel tape as mentioned above, the reader tape of the length more than the radius length of a reel is connected at the nose of cam of a carrier tape, this reader tape is pasted up on a winding core (2) in an adhesive tape, a reader tape is pulled out by the outside of the flange (21) of a reel, and solves, and a detector detects a reader tape, namely, it detects those of a carrier tape without a In the above-mentioned case, a reader tape must be connected to a carrier tape, this reader tape must be pasted up on the winding core (2) of a reel in an adhesive tape, and it takes time and effort.

[0011] Without crushing the point of a carrier tape (i.e., without it preparing an empty pocket), this invention stops a

carrier tape to a winding core, without needing a reader tape, and clarifies the reel for carrier tape rolling up which makes winding possible.

[0012]

[Means for Solving the Problem] The reel of this invention is a reel which rolls round the carrier tape (8) which contained small electronic parts in the pocket (9) formed in the ** pitch, has a flange (21) and (21) to the ends of a winding core (2), and forms the claw part (52) which gets into the crevice (10) between the pockets of a carrier tape (8), and stops a carrier tape (8) on a winding core (2).

[0013]

[Function and Effect] This carrier tape can be engaged with a claw part (52), without bending the point of a carrier tape (8), since the claw part (52) which fits into the crevice (10) between the pockets of a carrier tape (8) is formed in the peripheral surface of a winding core (2). Therefore, crushing of the pocket (9) by folding at the nose of cam of a carrier tape is planned like the former, and it is not necessary to prepare an empty pocket, and an overall length is covered and a carrier tape can be used without futility. Producing the fall of the tensile strength by folding of a carrier tape (8) does not have **, either.

[0014] Moreover, like [in the case of stopping a carrier tape (8) to a reel by the adhesive tape], a reader tape is not needed and it does not take the time and effort of junction of a reader tape and an adhesive tape.

[0015]

[Example]

The 1st example [drawing 1 , drawing 2 , and drawing 5]

A machine reel (1) prepares the flange (21) of a major diameter, and (21) in both sides of a winding core (2), and is formed in them, and the slit slot (3) is established in the winding core (2) at equal intervals at two or more places.

[0016] The piece of a stop (5) was inserted in arbitrary slit slots (3), and this piece of a stop is equipped with the claw part (52) which was settled in the slit slot (3) and which inserts in and **** from the peripheral surface of a winding core (2) at the nose of cam of the section (51). The nose-of-cam side is gradually formed in thin meat so that a claw part (52) may fit into the crevice (10) between the pocket (9) of a carrier tape (8), and (9) closely.

[0017] By inserting the piece of a presser foot stitch tongue (52) of the aforementioned piece of a stop (5) in the crevice (10) between the pocket (9) of the carrier tape (8) for looping around a machine reel (1), and (9), a carrier tape (8) can be stopped to a winding core (2), and winding becomes possible.

[0018] The 2nd example [drawing 3 , drawing 4 , and drawing 6]

The receptacle section (53) to which one pocket (9) of a carrier tape (8) fits in at the nose of cam of the piece of a stop (5) was formed. A receptacle section (53) order wall (54) and (54) are the claw part (52) which fits into the crevice (10) between the pockets of a carrier tape (8) closely.

[0019] The 3rd example [drawing 7]

By forming the ramp (55) which inclines low gradually towards the front from the front wall (54) of the piece of a stop of the 2nd example of the above (5), the 3rd example loses an extreme level difference between a carrier tape edge and a winding core (2), and prevents deformation of the pocket by extreme bending and this bending of the tape by the level difference at the time of the lap winding of a carrier tape.

[0020] The 4th example [drawing 8]

Intersect perpendicularly with the depth direction of the opening edge of the slit slot (3) on the winding core (2), and the axis of a reel, and a flat part (22) is formed. When you stop a carrier tape (8) to the piece of a stop (5), the level difference between a carrier tape edge and a winding core (2) is made still smaller, and let prevention be a thing still more effective than the 3rd example of the above for bending of the tape by the level difference, i.e., deformation of a pocket, at the time of the lap winding of a carrier tape.

[0021] The above-mentioned piece of a stop (5) can be carried out in paper products, such as corrugated paper, the piece of sheet cutting of plastics, an injection-molded product, the die-forming article of styrene foam, etc., and does not ask the quality of the material and a process. The quality of the material and a process are not asked about the quality of the material of a winding core (2), either. An example can be carried out also about the empty reel for carrier tape supply before containing electronic parts, although illustrated about the carrier tape which contained electronic parts.

[0022] Furthermore, although a winding core (2) and the piece of a stop (5) are another objects, deformation various by the claim -- a claw part (52) can really be fabricated to a winding core (2) -- is possible for each above-mentioned example.

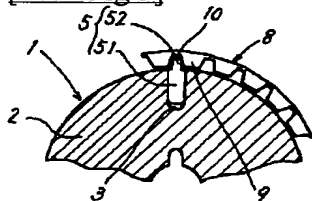
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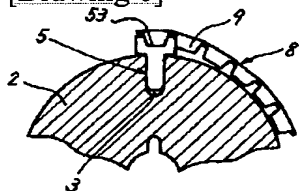
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DRAWINGS

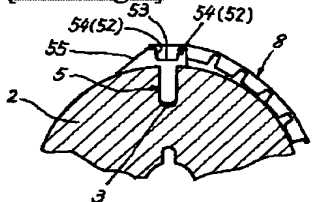
[Drawing 5]



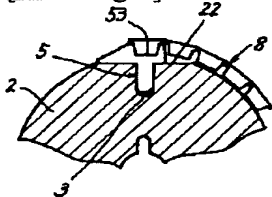
[Drawing 6]



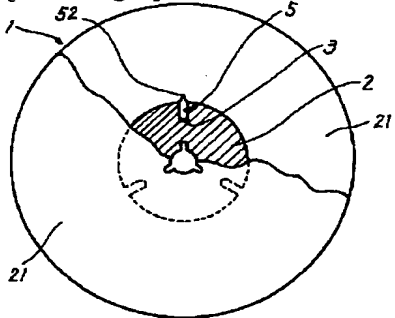
[Drawing 7]



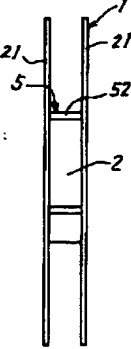
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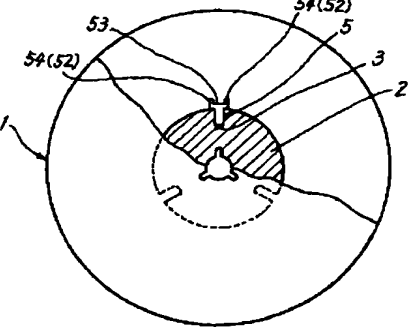
[Drawing 1]



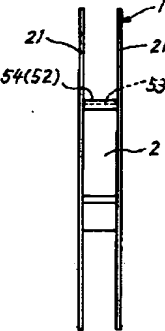
[Drawing 2]



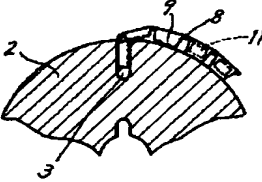
[Drawing 3]



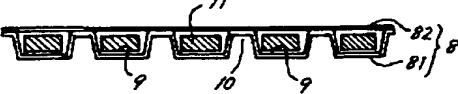
[Drawing 4]



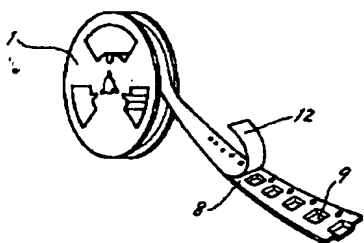
[Drawing 9]



[Drawing 10]



[Drawing 11]



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